

## ABSTRACT OF THE DISCLOSURE

An improved high pressure apparatus can include a plurality of complementary die segments. The die segments can have inner surfaces which are  
5 shaped to form a die chamber upon assembly of the die segments. A pair of anvils can be oriented such that an anvil is at each end of the die chamber. To prevent the die segments from being forced apart during movement of the anvils, force members can be connected to the die segments. The force members can apply discrete forces to the die segments sufficient to retain the die segments in substantially fixed positions  
10 relative to each other during application of force by the pair of anvils. Using such a high pressure apparatus can achieve pressures as high as 10 GPa with improved useful die life and larger reaction volumes.

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